AMENDMENTS TO THE CLAIMS

Please Amend the application according to the following revised claims listing. Please add new Claims 11-12. This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) An apparatus for interfacing neural signals emanating from inside a brain within a cranium, having a thickness, that is covered by a scalp with an external device, comprising:

   a. a first conductive skull screw, capable of being implanted in the cranium and under the scalp, having a ~~substantially~~ constant outside diameter and having a predefined length that corresponds to the thickness of the cranium, but less than a length that would cause the first conductive skull screw to invade the brain when implanted into the cranium, the first conductive skull screw not including a head having a diameter wider than the constant outside diameter;

   b. a second conductive skull screw, capable of being implanted in the cranium and under the scalp, having a ~~substantially~~ constant outside diameter and having a predefined length that corresponds to the thickness of the cranium, but less than a length that would cause the second conductive skull screw to invade the brain when implanted into the cranium, the second conductive skull screw not including a head having a diameter wider than the constant outside diameter;

   c. a transponder electrically coupled to the first conductive skull screw and to the second conductive skull screw, the transponder capable of being implanted between the cranium and the scalp, the transponder capable of detecting a differential electrical potential between the first conductive skull screw and the second conductive skull screw and generate a signal representative thereof, the transponder also capable of transmitting the signal;

d. an external receiver that receives the signal from the transponder and generates an output corresponding to the signal; and

e. a computer, in communication with the external receiver, that initiates a predetermined action that controls an external environment upon receiving the output from the external receiver and determining that the signal has a predetermined signal strength and duration so as to indicate attempted cortical control by a patient.

2. (Original) The apparatus of Claim 1, wherein the transponder comprises:

a. an amplifier that amplifies the signal;

b. a transmitter that transmits the signal; and

c. a power induction circuit that is capable of converting an electromagnetic signal into a current used to drive the amplifier and the transmitter.

3. (Original) The apparatus of Claim 1, wherein the first conductive skull screw and the second conductive skull screw comprise stainless steel.

4. (Cancelled)

5. (Cancelled)

6. (Currently Amended) A method for communicating a neural signal inside a brain to a remote receiver, comprising the steps of:

a. inserting a first conductive skull screw in a cranium under a scalp in a first location the first conductive skull screw having a substantially constant outside diameter and having a predefined length that corresponds to the thickness of the cranium, but less than a length that would cause the first conductive skull screw

to invade the brain when implanted into the cranium, so that the first conductive skull screw does not extend beyond the scalp;

b. inserting a second conductive skull screw in a cranium under the scalp in a second location, the second conductive skull screw having a substantially constant outside diameter and having a predefined length that corresponds to the thickness of the cranium, but less than a length that would cause the first conductive skull screw to invade the brain when implanted into the cranium, the first location and the second location chosen so that a change in neural electrical potential between the first conductive skull screw and the second conductive skull screw occurs when a patient performs a neural task, so that the second conductive skull screw does not extend beyond the scalp;

c. implanting a transponder under the scalp, the transponder being electrically coupled to the first conductive skull screw and to the second conductive skull screw;

d. detecting the change in neural electrical potential between the first conductive skull screw and the second conductive skull screw;

e. transmitting a signal representative of the change in neural electrical potential from the transponder to the remote receiver;

f. receiving the signal with an external receiver and generating an output from the external receiver when the signal is received;

g. determining that the signal has a predetermined signal strength and duration so as to indicate attempted cortical control by a patient; and

h. causing a predetermined action that controls an external environment to occur when the signal has a predetermined signal strength and duration.

7. (Original) The method of Claim 6, further comprising the step of amplifying the differential potential before the transmitting step.

8. (Original) The method of Claim 6, further comprising the steps of powering a transponder used to transmit the signal with a power induction circuit.

9. (Cancelled)

10. (Cancelled)

11. (New) The apparatus of Claim 1, wherein the predetermined action comprises moving a cursor on a computer monitor.

12. (New) The apparatus of Claim 6, wherein the predetermined action comprises moving a cursor on a computer monitor.